ACROSS THE SUN'S FACE

GOOD OBSERVATIONS OF THE TRANSIT OF VENUS.

CROWDS VIEWING THE RARE PHENOMENON —SMOKED GLASS AND TELESCOPES IN DEMAND—OBSERVATIONS TAKEN AT COLUMBIA COLLEGE AND ELSEWHERE.

The slow transit of the planet Venus across the disk of the sun was observed in this City yesterday by thousands of amateur astronomers, and, judging by the comments of the gazers, the observations were remarkably satisfactory to them, whatever may be the result of the experiments of the scientists. The day broke dark and cloudy, and the predictions that the day was to be characterized by a storm of rain or snow seemed likely to be verified. But before the time set for the opening of the celestial panorama the clouds cleared away, and by 9 o'clock the sun was shining from a comparatively clear sky. From the time Venus made her first contact with the rim of the sun until she passed completely from the disk a fine view of the transit was presented to observers in this City. The sky might have been slightly more favorable for observations, as light hazy clouds occasionally drifted across the face of the sun, but at no time were they dense enough to hide the sun.

The transit of Venus was a popular exhibition, and as it had been widely advertised in advance as the last performance for 122 years everybody who could possibly get a sight of the show embraced the opportunity. A very satisfactory view was obtained through smoked glasses, but the speck which was made on the disk of the sun by the planet was so small that it required some time of close application to the glass before it was recognizable. The dark spot appeared no larger than a small sized dried pea. It was very dark and stood out in bold relief against the red disk of the sun. Enterprising proprietors of telescopes of all sizes and powers stationed themselves in favorable places all over the City, and reaped a large harvest by exhibiting the planet on its journey across the sun at the rate of 10 cents a sight. In the City Hall Park a telescope was erected, and so great was the rush of people to take a look through it that the services of a Park policeman were required to keep them in line awaiting their turn. Once at the telescope a view of a few seconds only was allowed, and by actual count 20 men peered through the glass in 5 minutes. A telescope was mounted on Broad-street, near the Stock Exchange, and the owner of this, too, had all the business he could attend to. The brokers took as much interest in the exhibition as the other men and boys about the City. Broad and Wall streets were filled with bulls and bears, each with a piece of smoked glass in his hand, and when not engaged in scientifically examining the transit, they amused themselves by blaking each other's noses and faces.

Observations of the transit were made at the Cooper Institute, at which the aged philanthropist Peter Cooper assisted. He felt confident, he said, that he should never have the chance to witness another transit of Venus, and he was determined not to let the present opportunity slip. Observations were also made by Prof. Compton at the College of the City of New-York. The 120 boys of the Berkeley School, at No. 252 Madison-avenue, and over 2,000 other people viewed the transit through a new telescope with a 4-inch glass. The pupils of five of the young ladies' schools were also invited by Principal John S. White to take a look at Venus.

Scores of Columbia College students wearing mortar-board caps climbed to the top of the new law school building of the college yesterday to catch a glimpse of the transit of Venus. Prof. J. K. Rees had his telescope, an equatorial refractor, hoisted up there, as the observatory is not finished. In taking observations he was assisted by several students of the fourth year of the civil engineering class. The observations were confined to the four contacts of Venus with the sun. Two chronometers were used—one sidereal, the other, mean time, and two timers were intrusted with each chronometer, so that four independent records were obtained at each observation of time. The mean time chronometer was compared with the Washington time signals and its correction found by observation here. The sky was very hazy in the morning up to within a short time before the instant when the first contact was expected. At 9:05 the sun's image was very unsteady so that an eye-piece of 165 diameters could not be used and its power was changed to 48. A certain clearing coming, the notch of Venus indenting the disk of the sun was plainly seen, although only a little way on. The time noted was 9:08:40. An interesting phenomenon was noticed between the first and second contact at 9:21:51. The part of Venus's disk not yet on the sun was faintly surrounded by a semicircle of light, and at 9:24:11 this semicircle was very beautifully seen, from an astronomical point of view. The second contact occurred at 9:28:38, and its observation is considered by Prof. Rees to be a very good one. During the transit it was noticed that the disk of Venus was not uniformly black; at times little patches of light were visible on it that reminded the observer of patches of snow. The sky grew hazy toward the time of the third contact, although images could be seen very distinctly with a glass of 165 diameters. The third contact was noted at 2:52:05. Between this contact and the last the sky became still more hazy, and, in fact, cloudy, and accordingly the eye-piece of the telescope was changed and a reflecting wedge was used which gave more light. The unsteadiness of the atmosphere and the haze made it impossible to use the 165-glass, and a power of 95 was pressed into service in observing the last contact, which was called at 3:11:42. This observation was not considered good by reason of the condition of the sky. Prof. Rees expressed himself as gratified on the whole with his day's work, as the results were far more satisfactory than he had anticipated, considering the haze.

The sky was so cloudy at Bangor, Me., that Prof. Fernald could observe neither the beginning nor the end of the transit. At Hanover, N. H., only occasional views were obtained. At Amherst, Mass., the first and second contacts were not seen; the others were. The German astronomers at Hartford did not see the first contact, but at 1 o'clock had secured five full sets of heliometric measurements. At Meriden, Conn., the fire alarm bell was tolled when the transit began and the schools were closed for the day. Seven telescopes for public use were set in the grounds of the Rev. J. T. Pettee. The day was clear.

In this State, the astronomers at the Dudley Observatory, at Albany, were disappointed, as clouds obscured the sun. Mr. R. H. Tucker, Jr., at a station on the Helderberg Mountains, saw the first and second contacts. No black drop was seen, while an apparent projection existed from the sun's limb at the point of contact. Just before the calculated time the first glimmer of light between Venus and the edge of the sun was decided. At Utica only one glimpse of the sun was obtained, 10 minutes after the second inner contact. Prof. Robinson, at Rochester, got one glimpse just after the first contact. Dr. Swift did little better. At Vassar College, Poughkeepsie, some photographs were obtained, but clouds interfered greatly. At Little Falls the sky was generally obscured. Prof. Brooks, at the Red House Observatory, Phelps, found indications of the retraction of the atmosphere of Venus. Clouds prevented photographing. At West Point no indication of an atmosphere on Venus nor variation in the circumference of her disk was noticed. Prof. Michie, despite a thin veil of cloud, made observations which he regards as excellent. All the contacts were seen.

At Elmora, N. J., the two internal contacts and the second external contact were well defined. At Lafayette College, at Easton, Penn., the sun was unobscured during the entire transit, and Prof. Coffin obtained good results. Observations at the Allegheny University, Pittsburg, were generally unsatisfactory on account of the clouds. In the interval between the first two contacts light was seen gathered into a bright spot extending within the planet's disk and occupying 30 degrees of its circumference. At Baltimore Prof. Hastings observed all but the first contact, which was lost in the clouds. Four minutes before the second contact the atmospheric ring was seen all around Venus. At Wilmington, Del., the sun was unclouded from 9 until 10 A. M. The weather at Aiken, S. C., was unfavorable for taking complete observations of the transit of Venus. The sky continued overcast with heavy clouds until 12 M., when the sun burst forth and the German scientists commenced their labors, with results generally satisfactory. At the observatory in Cincinnati the observations were very unsatisfactory, on account of dense clouds. The astronomers at Madison, Ind., could see Venus on her journey about 11 A. M. At Chicago the weather was fine, giving good opportunity to see the transit. The St. Louis astronomers saw nothing on account of the clouds. At the Christian Brothers' College one brief glimpse was obtained. The Pacific coast observers had good fortune. At Lick Observatory, Mount Hamilton, the weather was fine, and 48 photographs had been obtained at 9 A. M. Throughout Canada the sky was cloudy, but astronomers in Toronto, Fredericton, Kingston, Ottawa, and other places were able to make occasional observations through rifts in the clouds.

In London clouds and snow rendered the transit invisible from the Greenwich Observatory. The phenomenon was plainly seen at Cork. The Madrid astronomers could do nothing on account of bad weather. The transit was favorably observed at Durban and at Cape Town.

At Portsmouth, England, observations of the transit of Venus were easily taken. At Penzance the transit was seen for two hours. At other places in England the sky was clouded, and observations could not be taken. The sky was cloudless in South Wales, and the transit was clearly visible. Black clouds, which

hid the sun from view in Paris, rendered useless
the great preparations made at the observatory
there.